

KORSHAKOVA, A.S.; BOLDYREV, T.Ye.; ALEXSANYAN, A.B.; SHATROV, I.I.; LEYTMAN, L.V.; FROLOV, V.I.; SEMINA, N.A.; DEVOYNO, L.V.; SIZINTSEVA, V.P.; BATURINA, L.M.; ABAKAROV, U.A.; GRIVAVTSEVA, V.P.; MEDZHIDOV, V.; KORSHUNOVA, N.A.

Studies on the reactogenic properties of Gamaleia IEM polyvaccine.
Zhur.mikrobiol.,epid.i imun. 30 no.11:37-41 N '59. (MIRA 13:3)

1. Iz Instituta epidemiologii i mikrobiologii imeni Gamalei AMN SSSR.
(DYSENTERY BACILLARY immunol.)
(TYPHOID immunol.)
(PARATYPHOID FEVERS immunol.)
(TETANUS immunol.)
(VACCINATION)

KNYAZEVA, L.A., kand.med.nauk; ARISTOVA, M.A.; KORSHUNOVA, N.A.;
~~SENKO, A.V.~~; SMAGINA, V.A.; ORLOVA, A.I.

Experience in detecting hypertensives. Trudy MONIKI no.5:88-93
'62. (MIRA 16:4)
(HYPERTENSION)

KUZNETSOVA, L.V.; KORSHUNOVA, N.N.

Basic factors of the environment and occupational hazards
occurring with accelerators of singly and multiply charged.
Med.rad. no.7:63-67 '61. (MIRA 15:1)
(RADIATION—TOXICOLOGY) (PARTICLE ACCELERATORS)

KORSHUNOVA, N.T. and MASKINA, M.V.

"Analysis of Outbreaks of Erythema Nodosum in Paediatric Institutions"

Pedijatrija No. 1, 40-46, Jan.-Feb., 1950. 1 figs., 29refs.

The authors had an unusual opportunity to study and observe 20 children between the ages of 7 and 13, who were all admitted to the same hospital with erythema nodosum. They came in on the second to seventh day of their illness, usually still with a raised temperature. The aetiology and epidemiology of the disease is discussed in great detail. The causes are divided into 4 groups: (1) rheumatism, (2) tuberculosis, (3) infectious diseases, and (4) allergy. Its aetiological connexion with rickettsiosis is ruled out. As regards its connexion with tuberculosis, the following results are made: (1) It is not clear why 20 children should have had tuberculosis in this form. (2) During the illness there were no obvious changes in the lungs in any of the children or visible signs of tuberculosis. (3) The non-tuberculous children did not develop any signs of tuberculosis. (4) Tuberculin tests were positive before the illness in 17 cases out of 20. (5) In 2 cases the tuberculin test was negative before, during and 6 months after the disease. (6) Gastric washouts did not contain any tubercle bacilli. (7) Eight cases were diagnosed in one day. The authors conclude there is good reason to suggest that erythema nodosum is an infectious disease possibly due to an unknown virus.

H. W Swann

Abstracts of World Medicine. Vol. 8 1950.

KORSHUNOVA, N.V.

The Ural-Ob Railroad. Lat. Sev. 4:251-252 '64.

(MIRA 18:3)

KORSHUNOVA, G. S.

"A Contribution to the Mechanism of Action by the Antibody on the Antigen," Zhurnal mikrobiol., 20, 2, 35-38, 1938

"APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R000825010006-9

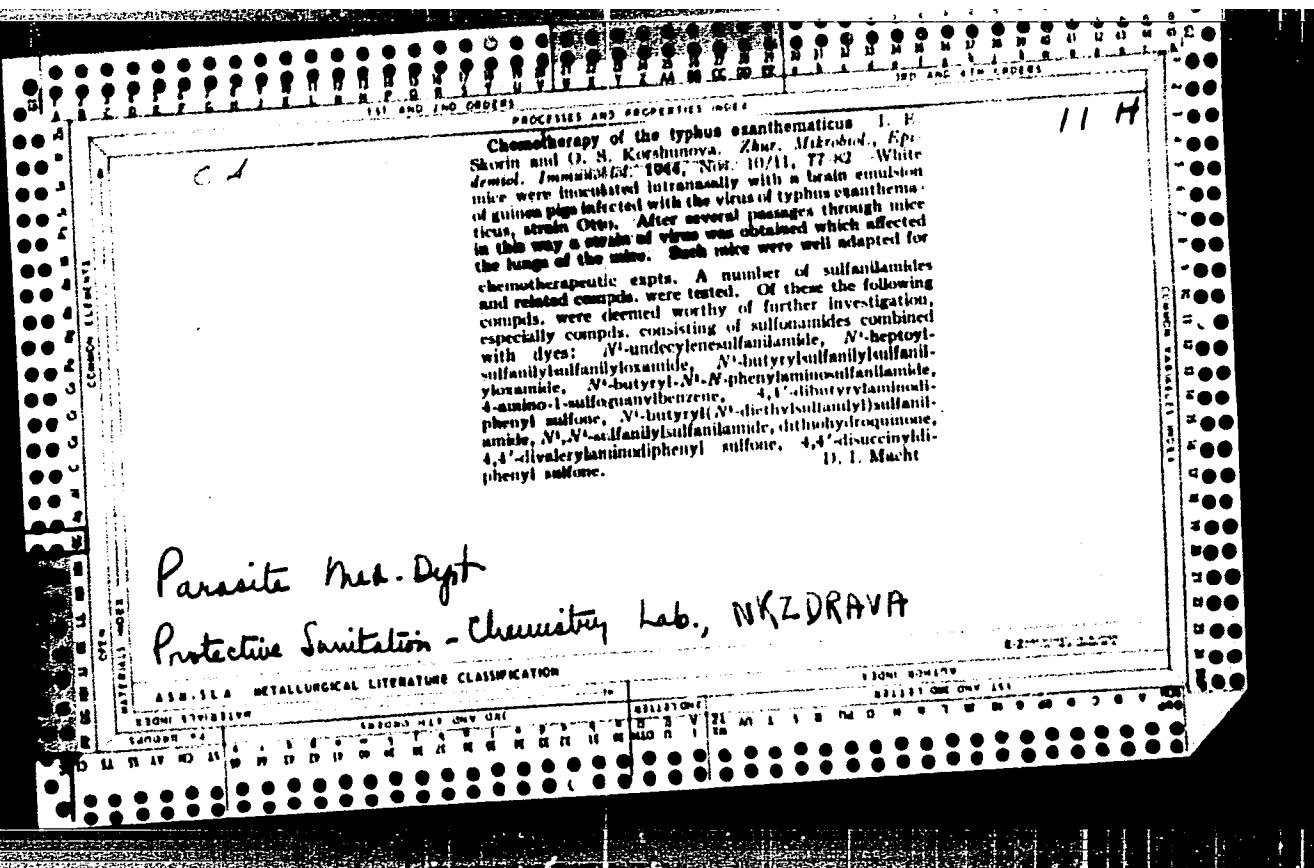
KORSHUNOVA, O. S.

"Etiology of Tick Exanthematous Typhus in the Krasnyarsk Region," Zhur. Mikrobiol., Epidemiol., i Immunobiol., (1-2): 59-64; 1943.

Translation NIH, copy in /M

APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R000825010006-9"



KORSHUNOVA, O. S.

Korshunova, O. S. and Piontkovskaya, S. P. "A virus isolated from ticks, *Hyalomma marginatum Koch*," Zool. zhurnal, 1949, Issue 2, p. 186-97

SO: U-4934, 29 Oct. 53, (Letopis 'Zhurval 'nykh Statey, No. 16, 1949).

KORSHUNOVA O. S.

PA 172143

~~Medicine - Marseilles Fever Carriers~~ 21 Oct 49
~~Carriers~~

"Carrier of Marseilles Fever," O. S. Korshunova, S. P. Petrova-Piontovskaya, Inst of Epidemiol and Microbiol imeni N. F. Gamaleya.

"Dok Ak Nauk SSSR" Vol LXVIII, No 6, pp 1151-1153

Series of tests establish Rhipicephalus sanguineus as carrier of subject fever. Only female tick carries the disease. Tested effect of previous infection by subject fever on infection by various other rickettsial diseases, and found it produced immunity in exptl animals only from virus from *Hyalomma marginatum*. Ticks found to occur on dogs in various towns of the Crimea. Table and figure. Submitted by Acad Ye. N. Pavlovsky

11 Aug 49.

172143

KORSHUMOVA, O.S.; AMAN'IN, V.V.

Results of the scientific session of the Ministry of Public Health
of the U.S.S.R., the Academy of Medical Sciences of the U.S.S.R.,
and the Institute of Microbiology and Epidemiology of the Academy
of Medical Sciences of the U.S.S.R. dedicated to the 7th birthday
of Academician N.N.Pavlovskii. Med. paraz. i paraz. bol. no.3:
281-284 Jl-B '54. (MIRA 8:2)
(PARASITOLOGY--CONGRESSES)

KORSHUNOVA, O.S.

PIONTKOVSKAYA, S.P.; KORSHUNOVA, O.S.; GROKHOVSKAYA, I.M.

Three natural nidi. Zool.zhur. 33 no.2:323-330 Mr-Ap '54. (MLRA 7:5)

1. Otdel parazitologii i meditsinskoy zoologii (zaveduyushchiy - akademik Ye.N.Pavlovskiy) IIM Akademii meditsinskikh nauk SSSR im. N.F.Gamaleya.
(Insects as carriers of disease) (Rodents as carriers of disease)

KONSHUNOVA, O.-S., PIOMKOVSKAYA, S. P., MISHCHENKO, N. E.

"On the natural focus of the tick-borne spotted fever in Asia and the Tuva Autonomous Oblast." p. 111

Desyatoye soveshchaniye po parazitologicheskim problemam i prirodnym boleznyam. 22-29 Oktyabrya 1959 g. (Tenth Conference on Parasitological Problems and Diseases with Natural Foci 22-29 October 1959), Moscow-Leningrad, 1959, Academy of Medical Sciences USSR and Academy of Sciences USSR, No. 1 254pp.

Inst. of Epidemiology and Microbiology, AMS USSR/ Moscow

KORSHUNOVA, O. S., ZHANENSKIY, V. G.

"On the experimental investigation of the natural foci of infectious nephrosonephritis in the far eastern Primorye." p. 119

Deyntoye soveshchaniye po parazitologicheskim problemam i prirodnoochakovym boleznyam. 22-29 Oktyabrya 1959 g. (Tenth Conference on Parasitological Problems and Diseases with Natural Foci 22-29 October 1959), Moscow-Leningrad, 1959, Academy of Medical Science USSR and Academy of Sciences USSR, No. 1 254pp.

KORSHUNOVA, O.S.; PIONTKOVSKAYA, S.P.; NIKITINA, N.A.

Natural reservoirs of Asiatic tick-borne exanthematic typhus
in Khakassia and the central part of the Western Sayans. Zool.
zhur. 38 no.3:385-393 Mr '59. (MIRA 12:4)

1. Department of Infections of Natural Nidality, Institute of
Epidemiology and Microbiology, Academy of Medical Sciences of
the U.S.S.R. (Moscow).
(KHAKASS AUTONOMOUS PROVINCE--TYPHUS FEVER)
(SAYAN MOUNTAINS--TYPHUS FEVER) (ANIMALS AS CARRIERS OF DISEASE)

KORSHUNOVA, O. S.; PIONTKOVSKAYA, S. P.

Natural foci of tick-borne typhus in eastern Kazakhstan. Med.
paraz. i paraz. bol. no.4:442-446 '61. (MIRA 14:12)

1. Iz otdela infektsiy s prirodnoy ochagovost'yu (zav. - prof.
P. A. Petrishcheva) Instituta epidemiologii i mikrobiologii imeni
N. F. Gamalei AMN SSSR (dir. - prof. S. N. Muromtsev).

(KAZAKHSTAN—TYPHUS FEVER)

PIONTKOVSKAYA, S.P.; FLINT, V.Ye.; KORSHUNOVA, O.S.,

Natural focus of tick-borne exanthematous fever in the Ubsu
Nur t^{re}ugh in the Tuva A.S.S.R. Med. paraz. i paraz. bol. 32
no.5: 581-585 S-0*63 (MIRA 16:12)

1. Iz otdela prirodnocchagovykh bolezney Instituta epidemiclogii
i mikrobiologii imeni N.F. Gamalei.

CHOKHOVSKAYA, I.M.; SIDOROV, V. Ye.; KORSHUNOVA, N.G.

Is Rickettsia sibirica influenced by the feeding of ticks on
immune animals? Med. paraz. i paraz. bol. 33 no.2:178-181
(MIRA 18:1)
Mr-Ap '64

1. Otdel infektsiy s prirodnoy ochagovost'yu (zav.- prof.
P.A. Petrishcheva) Instituta epidemiologii i mikrobiologii
imeni N.F. Gamalei (direktor - prof. P.A. Vershilova).

KORSHUNOVA, O.S.; PIONTKOVSKAYA, S.P.; FLINT, V.Ye.

Natural foci of tick-borne typhus fever in the Buryat A.S.S.R.
Zool. zhur. 44 no.7:980-985 '65. (MIRA 18:9)

1. Otdel prirodnoochagovykh bolezney Instituta epidemiologii
i mikrobiologii AMN SSSR, Moskva.

Card 1/2

UDC: 616.981.711-036.21(470.312)

ACC NR: AP6030340

during tick metamorphosis was established. Complement-fixing antibodies to *Rickettsia sibirica* were found in only 2 of 50 Tula inhabitants tested, which agrees with the normally rare infestation of man by *Dermacentor pictus*. [WA-50; CBE No. 12]

SUB CODE: 06/ SUBM DATE: 02Sep65/ ORIG REF: 008/

Card 2/2

Copycat
KORSHUNOVA, T. M.: Master Agric Sci (diss) -- "The use of the black currant as
a crop in western Kazakhstan Oblast". Alma-Ata, 1958. 17 pp (Min Agric USSR,
Kazakh State Agric Inst), 200 copies (KL, No 4, 1959, 129)

KORSHUNOVA, T.S.

Purine metabolism in hepatocerebral dystrophy. Zhur. nevr.
i psikh. 65 no.1:24-28 '65. (MIRA 18:2)

1. Institut nevrologii (direktor - prof. N.V. Konovalov)
AMN SSSR, Moskva.

ARTAMOHOV, D.V.; BELAVIETSEV, N.V.; KORSHUNOV, V.A., redaktor;
KANDYKIN, A.Ye., tekhnicheskiy redaktor.

[Preparing the rims of railroad car wheels; according to
Engineer F.Kovalev's method] Obrabotka bandashei vagonnykh
kolesnykh par; obobshchenie po metodu inzh. Kovalova.
Moskva, Gos.transp.shel-dor.izd-vo, 1952. 31 p. [Microfilm]
(Car wheels) (MLRA 9:4)

KAZANSKIY, G.A., Laureat Stalinskoy premii; KOSAREV, A.A.; SAMOKHVALOV,
S.F.; URYUPIN, G.M.; KORSHUNOVA, V.A., red.; VERINA, G.P., tekhn.
red.

[Maintenance and repair of all-metal passenger cars]Ustroistvo i
remont tsel'nometallicheskikh passazhirskikh vagonov. Moskva, Gos.
transp. zhel.-dor. izd-vo, 1952. 274 p. (MIRA 15:1)
(Railroads—Passenger cars)

KORSHUNOV, V.A., inshener.

Improving brake equipment for railroad rolling stock. Standarti-
zatsiya no. 4:66-68 J1-Ag '56. (MLRA 9:11)
(Brakes)

SOV/135-59-11-20/26

18(5)

AUTHORS: Bykov, V.V., and Korshunova, V.A., Engineers

TITLE: New State Standards on Reducers for Gas-Flame Working of Metals

PERIODICAL: Svarochnoye proizvodstvo, 1959, Nr 11, pp 42-43 (USSR)

ABSTRACT: 3 classes of reducers are encompassed by the new GOST 6268-59: 1st class ensuring a working pressure accuracy of $\pm 5\%$; 2nd class with $\pm 10\%$ and 3rd class with $\pm 15\%$ accuracy. Types $\frac{0.1-1.5}{3.0-5}.25-I$, $\frac{0.1-1.5}{3.0-5}.25-III$ and $\frac{0.1-1.5}{30.0-50}.25-II$ are acetylene, and Types $\frac{0.5-8}{1.0-8}.150-I$ and $\frac{1.0-15.0}{7.5-60}$ are oxygen reducers. There is 1 table.

ASSOCIATION: VNIIAVTOGEN

Card 1/1

KORSHUNOVA, V. A.

Standardizing equipment and materials used in flame processes.
Standartizatsiya 24 no. 9:7-12 S '60. (MIRA 13:9)
(Gas welding and cutting)

TAGEYEVA, S.V.; BRANDT, A.B.; KORSHUNOVA, V.S.

Optical properties of Chlorella pyrenoidosa suspensions.
Biofizika 6 no.5:572-581 '61. (MIRA 15:3)

1. Institut biologicheskoy fiziki AN SSSR, Moskva.
(ALGAE)
(SPECTRUM ANALYSIS)

TAGEYEVA, S.V.; BRANDT, A.B.; KORSHUNOVA, V.S.

Optical properties of plants under varying irradiation.
Biofizika, 7 no.2:240-243'62. (MIRA 16:8)

1. Institut biologicheskoy fiziki AN SSSR, Moskva.
(PLANTS, EFFECT OF RADIATION ON)

L 12614-63 EWT(1)/BDS/ES(a)/ES(b)/ES(c)/ES(k) AIFTC Pb-4 A/DD
ACCESSION NR: AP3001542 S/0216/63/000/003/0391/0404

AUTHOR: Tageyeva, S. V.; Brandt, A. E.; Korshunova, V. S.; Generozova, I. P.

TITLE: Optic system characteristics of a Chlorella suspension and its
photosynthetic activity

SOURCE: AN SSSR. Izvestiya. Seriya biologicheskaya, no. 3, 1963,
391-404

TOPIC TAGS: chlorella, suspension, optic system, photosynthesis, autotrophic component

ABSTRACT: Chlorella suspensions are of interest as a possible food source and as an autotrophic component in space ships for prolonged flights. Data on the optic characteristics of such suspensions can be useful for more intensive growth of Chlorella cells. Several Chlorella suspension strains of different density were investigated on a general purpose apparatus for studying optic characteristics. Light absorption by the same type of Chlorella suspension conforms to the Buger-Lambert-Beer law and the absorption value is determined mainly by pigment (chlorophyll) concentration. But the absolute

Card 1/32

L 12614-63
ACCESSION NR: AP3001542

absorption value for different Chlorella types depends on cell size and microscopic structure. Small cells of a Chlorella suspension with a chloroplast of a more regular spheroid shape have a greater light diffraction capacity than large cells with a cuplike chloroplast. The light diffraction coefficient of low concentration Chlorella suspensions is proportional to the number of cells in the volume tested. Optic properties of Chlorella suspensions change according to the regularities established in physics. The light absorption coefficient of a Chlorella suspension increases slightly during bubbling at 90 l per hr due to light diffusion at the interphase boundary of water and air but there is no change in the optic properties of the Chlorella cells. Data on optic parameters of Chlorella suspensions can provide insights into the nature of photosynthesis and help produce unicellular cultures of higher productivity. This type of study should be developed together with methods of studying ultrathin structures, biophysical indices, and the respective functional states of individual cells and of suspensions as a whole. Crig. art. has: 10 figures.

ASSOCIATION: Institut biologicheskoy fiziki Akademii nauk SSSR (Institute of Biological Physics, AN SSSR)

Card 2/32

TAGEYEVA, S. V.; GENEROZOVA, I. P.; BRANDT, A. B.; KORSHUNOVA, V. S.

"Relations between the ultra-fine structure of the plant plastid apparatus and its functions."

report submitted for 10th Intl Botanical Cong, Edinburgh, 3-12 Aug 64.

Inst of Biological Physics, AS USSR, Moscow.

ACCESSION NR: AT4037704

S/2865/64/003/000/0335/0354

AUTHOR: Tageyeva, S. V.; Brandt, A. B.; Korshunova, V. S.; Generozova, I.P.

TITLE: Characteristics of algae suspensions as optical systems

SOURCE: AN SSSR. Otdeleniye biologicheskikh nauk. Problemy* kosmicheskoy biologii, v. 3, 1964, 335-354

TOPIC TAGS: light absorption, photosynthesis, closed ecological system, algae, Chlorella, life support

ABSTRACT: The optical properties of suspensions of Chlorella pyrenoidosa P-82 and Chlorella sp. K strains have been studied with the aid of a universal device for investigation of optical properties of plant leaves. Light absorption by Chlorella suspensions is largely determined by concentration of pigments (chlorophyll). Nevertheless, the absolute value for various strains of Chlorella strongly depends on cell dimensions and their microscopic structures. Many cells of the Chlorella sp. K suspension possessing chloroplasts of a more regular spherical shape have a greater light scattering capacity than the larger Chlorella pyrenoidosa P-82 cells which have a cup-shaped chloroplast. The value of the scattering

Card 1/3

ACCESSION NR: AT4037704

coefficient of both types of Chlorella suspensions at low densities is proportional to the density of suspensions. Transmission of a directed light beam by the suspension does not depend on the wavelength of the light, but can be explained by the "sieve effect." In the study of synchronous cultures of Chlorella pyrenoidosa P-82, considerable changes were found in its optical properties during development of cells. The greatest light absorption was found in the period of active growth and chlorophyll accumulation, i. e., 4 to 9 hr after the onset of the autospore growth. After cell division the amount of chlorophyll and the intensity of photosynthesis in the new autospores decrease considerably. At the same time the coefficient of absorption and the photosynthesis of the whole suspension continues to increase owing to the increase of suspension density at the expense of divided cells. An insignificant increase in the coefficient of light absorption of the Chlorella suspension when air is bubbled through the suspension (90 l/hr) is due to the scattering of light at the interface between water and air and not to a change in the optical properties of the cells. Knowledge of the optical parameters of strains of algae can provide valuable information on the nature of their photosynthetic mechanism and can also be used for purposes of calculation in designing equipment for obtaining high-productivity cultures of unicellular algae. On the basis of the data obtained, it is possible to draw the conclusion that if various

Card 2/3

ACCESSION NR: AT4037704

strains of Chlorella are to be used as one of the basic autotrophic components in the spacecraft system of the future, the particular natures of their optical systems should be studied in detail so that they can be taken into consideration in designing life support equipment.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: PH, LS

NO REF SOV: 015

OTHER: 014

Card

1 3/3

TAGEYEVA, S.V.; KAZANTSEV, E.N.; TAIROBEKOV, M.G.; KORSHUNOVA, V.S.

Elements of the mechanism of motility of cytoplasmic structures
in plant cells. Fiziol. rast. 12 no.5:854-865 S-0 '65.

(MIRA 19:1)

1. Institut biofiziki AN SSSR, Moskva.

ACC NR: AP6036769

(A,N)

SOURCE CODE: UR/0326/66/013/006/0958/0966

AUTHOR: Tageyeva, S. V.; Korshunova, V. S.; Mikhnevich, M. L.

ORG: Institute of Biophysics, Academy of Sciences SSSR Moscow (Institut biologicheskoy fiziki Akademii nauk SSSR)

TITLE: Effect of nitrogen nutrition and type of illumination on the growth and development of Chlorella pyrenoidosa Pr. 82T. cultures

SOURCE: Fiziologiya rasteniy, v. 13, no. 6, 1966, 958-966

TOPIC TAGS: Chlorella, photosynthesis, nitrogen nutrition, urea, photosynthetic productivity

ABSTRACT: Experiments were performed to determine the effects of various types of nitrogen nutrition and illumination of varying wavelength on Tamiya medium suspensions of Chlorella pyrenoidosa Pr. 82T. Potassium nitrate (5 g/l) and urea (1.49 g/l) were used as sources providing equal amounts of nitrogen. Illumination was provided by 3L-7 reflector lamps producing 60 watts/m². Urea proved to be a more efficient source than potassium nitrate, increasing biomass by a factor of 1.5-2. Ammonia poisoning or infection by microorganisms can be reduced or prevented under conditions of intense cultivation by systematic addition of fresh nutrient medium. Under these conditions illumination remains one of the most important factors regulating the development of Chlorella suspensions. Illumination rich in red light can be

UDC: 581.143:581.133.035:582.26

Card 1/2

ACC NR: AP6036769

recommended for high production. The use of urea affects the ultrafine structure of Chlorella cells by producing a dense structural organization of the protoplast, promotes more intense cellular metabolism, and leads to accumulation of nucleic acids. As a result, the biomass yield increases. Orig. art. has: 11 figures.. [BM]

SUB CODE: 06/ SUBM DATE: 07Aug65/ ORIG REF: 005/ OTH REF: 006/
ATD PRESS: 5109

Card 2/2

BRAGIN, N.A., inzh.; KORSHUNOVA, Ye.L., inzh.

Auxiliary production in peat enterprises. Torf. prom. 38
no. 5:22-23 '61. (MIRA 14:10)

1. Gosudarstvennyy institut po proyektirovaniyu zavodov
torfyanoy promyslennosti.
(Peat industry)

KORSHUNOVÁ, YE.

Labor Laws and Legislation

"Right to work." A. E. Pasherstnik. Reviewed by YE. Korshunova. Izv. AN SSSR. Otd.ekon. i prava no. 1, '52.

9. Monthly List of Russian Accessions, Library of Congress, August 1952, Uncl.

KORSHUNOVA, YE.

Woman - Employment

Soviet legislation protects the rights of the working woman. YE. Korshunova. V pom. profaktivu No. 5, 1952.

9. Monthly List of Russian Accessions, Library of Congress, April 1957, Uncl.
2

KORSHUNOVA, Ye.; FEDOROV, K.

Vacation camps. Prof.-tekhn, obr. 11 no.5:26 Ag '54. (MLRA 7:9)
(Camps) (Leningrad--Students) (Students--Leningrad)

KORSHUNOVA, Ye.N.; KRASNOPOLOVSKIY, A.S.; MOSKALENKO, G.K., redaktor;
ACHMATOV, V.A., redaktor; SHEVCHENKO, G.N., tekhnicheskiy redaktor.

[Soviet labor law and problems of labor productivity; an outline]
Sovetskoe trudovoe pravo i voprosy proizvoditel'nosti truda;
ocherki. Moskva, Izd-vo Akademii nauk SSSR, 1955. 162 p.(MLRA 8:12)
(Labor laws and legislation) (Labor productivity)

KORSHUNOVA, Ye.

Initiative of the Communist Youth League. Prof.-tekhn. obr. 12
no.6:27-28 Je '55. (MIRA 8:9)

1. Inspektor Leningradskogo gorodskogo upravleniya trudovykh
rezervov.
(Communist Youth League)

KORSHUNOVA, Ye.

Political studies in building-trade schools; *Prof.-tekhn.ebr.13*
no.3:21-22 Mr '56. (MIRA 9:7)

1.Inspekter Leningradskogo gospodskogo upravleniya trudovykh
reservev.
(Communist education)

KORSHUNOVA, E.

27-7-9/37

AUTHOR: Korshunova, E., Inspector of the Leningrad City Administration
of Labor Reserves.

TITLE: Educating in the Traditions of the Working Class (Vospityvat'
na traditsiyakh rabochego klassa)

PERIODICAL: Professional'no - Tekhnicheskoye Obrazovaniye, 1957, # 7(146),
p 11 (USSR)

ABSTRACT: This short article deals with the contact established between
the old, distinguished factory workers and the students of
professional schools of the Labor Reserves.
The article contains one photo.

ASSOCIATION: Leningrad City Administration of Labor Reserves (Leningrad-
skoye gorodskoye upravleniye trudovykh rezervov)

AVAILABLE: Library of Congress

Card 1/1

TATARINOVA, N.; KORSHUNOVA, Ye.

Soviet women are active builders of communism. Sots. trud 5 no.3:
3-12 Mr '60. (MIRA 13:6)
(Women--Employment)

KORSHUNOVA, Ye.

Female labor in the U.S.S.R. Sots. trud 6 no. 2:36-46 F '61.
(MIRA 14:2)

1. Chlen Prezidiuma Komiteta sovetskikh zhenshchin.
(Women--Rights of women) (Women--Employment)

KORSHUNOVA, Z.; KORSHUNOVA, A.

Results of the testing of certain phenols with tartaric acid -
ammonia solutions of iron chloride. Uch.zap. MOPI 84:187-189
'59. (MIRA 14:9)
(Phenols)

23965
S/113/60/000/004/002/007
D249/D301

11.7000

AUTHORS: Sviridov, Yu. B., Candidate of Technical Sciences,
Shatrov, Ye.B. and Korsik, Ye.K.

TITLE: Stereoscopic recording of fuel combustion processes
in engines

PERIODICAL: Avtomobil'naya promyshlennost', no. 4, 1960, 14-16

TEXT: The authors mention the method of filming the combustion processes in engines by using high speed and ultra high speed cameras permitting 500,000 and more frames in a second to be produced. Experiments carried out in 1957-1959 disclosed that still better results were obtained when studying combustion processes when stereoscopic filming of the flame was applied. In this filming each frame appears in the form of a stereoscopic pair (two images) obtained from two different points of view (Ref. 2: B.T. Ivanov, Stereokinotekhnika, izd-vo "Iskusstvo", 1956) and (Ref. 3: V. Pitch, Stereophotographie, Halle (Saale), Photokino-verlag). Experiments with stereoscopic filming were carried out in the

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Card 1/3

23965

S/113/60/000/004/002/007

D249/D301

Stereoscopic recording...

Laboratoriya dvigateley (Laboratory for Engines) of the AS USSR. Combustion processes were observed in a cylinder having a constant volume. The filming was done by an AEG camera permitting 16-80000 frames to be performed in a second. The recording was carried out through an optically transparent glass JLK-5 (LK-5), mounted in the rear cylinder cover, on a perforated film 35 mm wide, having a sensitivity of 200-250 units. In order to receive a double image on the film, the camera lens ($F : 2$; $f = 75$ mm) was provided with a special prismatic stereoscopic attachment, having a detachable basis of 65 mm. The distance between the camera and the object (rear plane of the glass) was 400 mm. The combustion chamber depth was 120 mm. The frame size for each stereoscopic pair was 18 x 12 mm. A diagram is given, showing how the place of the ignition nucleus formation is determined. As a rule, flat photographing gives an erroneous image of the volume of the burned out charge. When looking at only one frame, it may seem that 50% of the charge is burned out, while inspecting both images concurrently it becomes evident that only 20% of the volume have been seized by flame. The ignition nucleus are

Card 2/3

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CIA-RDP86-00513R000825010006-9

KORSIC, M., dr.

Bulk freight in Yugoslav harbors. Medium transp.
no.ll:766-768 N '62.

APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R000825010006-9"

KORSIC, Mirko, dr

Palletization of transport in the harbor of Koper. Medun transp
8 no.4:241-244 Ap '62.

KORSIC, M.

Organization of warehouses in Yugoslav harbors. Medun transp.
8 no.7:475-477 Jl '62.

FILIPEC, L.; KORSIKA, I. L.

Determination of the glucose level in pleural exudates in
the differential diagnosis of exudative pleurisy. Tuber-
kuloza 15 no. 3:468-473 Jl-D'63.

1. Ftiziolska klinika, Ljubljana. Predstojnik: prof. dr.
R. Neubauer.

S

HEUBAUER, R.; KARLIN, M.; KORSIKA, L.; FILIPIC, L.; KOMAR, M.; MANUT, B.

Certain considerations on the recurrence of pulmonary tuberculosis.
Tuberkulosa, Beogr. 11 no.3:318-327 '59.

1. Ptisioloska klinika, Ljubljana; Bolnica za tuberkulosu, Sesana.
(TUBERCULOSIS PULMONARY therapy)

KORSIKOV, I. F.

"Agricultural Measures Which Increase the Yield of Perennial Grasses
in the Year of Seeding on Peat Bog Soils of the Belorussian SSR."
Cand Agr Sci, Inst of Water and Marsh Economy, Acad Sci, Belorussian
SSR, Minsk, 1953. (RZhBiol, No 2, Sep 54)

Survey of Scientific and Technical Dissertations Defended at USSR
Higher Educational Institutions (10)

So: Sum. No. 481, 5 May 55

KORSKHOV, I.S.

Electropneumatic springless pressure regulator. Gor. zhur no.4:52 Ap '63.
(MIRA 16:4)

1. Konotopskiy zavod "Krasnyy metallist".
(Mine hoisting—Pneumatic driving) (Automatic control)

Korski F.

Korski F. "Getting Salt by the Spraying Method in a Mine at Inowroclaw." (Urabianie soli metoda natryskowa na kopalni w Inowroclawi). Przeglad Gorniczy, No. 4, 1950, pp. 195-198, 4 figs.

Geological description. The hydraulic method is the only one employed for driving of drifts and excavations. The advantages of this method are: additional saturation of brines in underground rooms; equipment for pumping the brine; occurrence of potassium salts, sterile bands, methane, sulphuretted hydrogen and mother lyes.

SO: Polish Technical Abstracts - No. 2, 1951

"APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R000825010006-9

KORSKI, Witold, doc. (Krakow)

That was not very precisely stated. Problemy 19 no.2:142 '63.

APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R000825010006-9"

KORSMIK, A.A.

~~Pump~~ For removing oil from the socket of spinning machine
spindles. Obm.tekh.opyt. [MLP] no.16:75-77 '56. (MIRA 11:11)
(Spinning machinery--Lubrication)

"APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R000825010006-9

KORSOV, L. A., Engineer

Mos., "Krasnyy proletariy Plant (-1945-)

"Adjustment of Machine Tools," Stanki I Instrument, 16, Nos. 1-2, 1945

BR-52059019

APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R000825010006-9"

KORSOV, L.A.
LOKTEV, D.A. inzhener; BABSOV, A.I., inzhener, retsensent; KORSOV, L.A.,
inzhener, retsensent; DUMAYEV, P.F., inzhener, redaktor; BEZEL'-
MAN, R.D., inzhener; redaktor literatury po metalloobrabotke i
stankostroyeniyu; TUKHOMOV, A.Ya., tekhnicheskiy redaktor; POPO-
VA, S.M., tekhnicheskikh redaktor.

[Metal-cutting machines for toolmaking] Metallorezhushchie stanki
dlia proizvodstva instrumenta. Moskva, Gos. nauchno-tekhn. izd-vo
mashinostroit. lit-ry, 1953. 303 p. [Microfilm] (MLRA 7:10)
(Machine tools)

KRASIVSKIY, Sergey Petrovich; KORSOV, Lev Alekseyevich; GUROV, S., redaktor;
YNGOROVA, I., tekhnicheskiy redaktor

[Mechanization and automatization in industry] Mekhanizatsiya i
avtomatizatsiya v promyshlennosti. [Moskva] Moskovskii rabochii,
1956, 119 p.
(Automatic control)

Korsov, L.A.

AUTHOR: Korsov, L.A., Engineer 118-58-3-19/21

TITLE: The Determination of the Economical Effectiveness of New Technique (Opredeleniye ekonomiceskoy effektivnosti vnedreniya novoy tekhniki)

PERIODICAL: Mekhanizatsiya Trudoyemkikh i Tyazhelykh Rabot, 1958, # 3, pp 42-44 (USSR)

ABSTRACT: This is a critical review of an article by the Doctor of Technical Sciences, Professor G.A. Shaumyan, published in "Mekhanizatsiya Trudoyemkikh i Tyazhelykh Rabot, 1957, # 7". Shaumyan considered the public labor productivity to be the main factor in determining the economic effectiveness.

There are 3 Soviet references.

AVAILABLE: Library of Congress

Card 1/1

PROKOPOVICH, Arkadiy Yefimovich; GRIGOR'YEV, I.G., inzh., retsenzent;
KORSOV, L.A., inzh., red.; SMIRNOVA, G.V., tekhn.red.

[Machinery industry in 1959-1965] Stankostroenie v 1959-1965 gg.
Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry. 1959.
152 p. (Sovetskoe mashinostroenie v 1959-1965 gg.).

(MIRA 13:3)

(Machinery industry)

POPOV, S.G., red.; KORSOYUTSKAYA, P.Ya., red.; POTAPENKOVA, Ye.S.,
tekhn. red.

[Some problems in modern aerodynamics] Nekotorye zadachi sov-
remennoi aerodinamiki; sbornik statei. Moskva, Izd-vo inostr.
lit-ry, 1961. 99 p. (MIRA 15:8)
(Aerodynamics) (Plasma (Ionized gases))
(Magneto hydrodynamics)

KORST, A.N.; KORONELLI, T.V.; LIUEMAN, R.R.; SAGITULLIN, R.S.

Fluorescent method for the separate determination of ergot
alkaloids and tryptophan. Zhur. anal. khim. 20 no.8:845-849
'65. (MIRA 18:10)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova
i Institut psichiatrii AMN SSSR.

KORST, L. O.

Korst, L. O. -- "Secondary syndromes in cases with tumors of the superior parietal region," Voprosy neyroknirurgii, 1949, No. 3, p 32-43, - Bibliog: p. 42-43

SO: u-5241, 17 December 1953, (Letonis 'zhurnal 'nykh Statey, No. 26, 1949).

Neurological Sector, Inst. Neurosurgery im. N. N. Burdenko, AMS USSR

KORST, L. O.

KORST, L. O. -- "Tumors of the Parietal Area." Sub 13 Jun 52, Acad
Med Sci USSR. (Dissertation for the Degree of Doctorate in
Medical Sciences).

SO: Vechernaya Moskva January-December 1952

KORST, L.

Dynamics of restoration of cortical functions following excision of
extracerebral tumors. Vopr. neirokhir. 17 no.1:29-32 Jan-Feb 1953.
(CLML 24:2)

I. Of the Institute of Neurosurgery imeni Academician N. N. Burdenko
(Director -- Prof. B. G. Yagorov, Corresponding Member AMS USSR) of the
Academy of Medical Sciences USSR, Moscow.

KORST, L.O.

Basic principles in diagnosis of tumors of the parietal lobes. Vopr. neirokhir. 17 no.3:15-22 May-June 1953. (CIML 25:1)

1. Of the Neurological Sector (Head --- Prof. M.Yu. Rapoport), Institute of Neurosurgery imeni Academician N. N. Burdenko (Director --- Prof. B. G. Yegorov, Corresponding Member AMN USSR), Academy of Medical Sciences USSR.

KORST, L.O.

Diagnosis of bilateral parietal calcous brain tumors. Vop.
neirokhir. 24 no. 3:28-31 My-Je '60. (MIRA 14:1)
(BRAIN--TUMORS)

KORST, L.O., doktor med.nauk; FANTALOVA, V.L., kand.biolog.nauk

Characteristics of disorders of some cortical functions in tumors
of the temporal and occipital lobes of the brain. Probl.sovr.
neirokhir. 3:153-164 '59. (MIRA 16:6)
(BRAIN-TUMORS) (CEREBRAL CORTEX)
(CONDITIONED RESPONSE)

ARENDT, A.A., zasl. deyatel' nauki prof.; ARKHANGEL'SKIY, V.V., kand. med. nauk; BLAGOVESHCHENSKAYA, N.S., doktor med. nauk; GAL'PERIN, M.D., prof.; KANDEL', E.I., kand. med. nauk; KORNYANSKIY, G.P., prof.; KORST, L.O., doktor med. nauk; RAZDOL'SKIY, I.Ya., zasl. deyatel' nauki prof.; EMDIN, P.I., zasl. deyatel' nauki prof. [deceased]; EPSHTEYN, P.V.; DAVIDENKOV, S.N., prof., otv. red.; BOGOLEPOV, N.K., prof., zam. otv. red.; SENCHILO, K.K., tekhn. red.

[Multivolume manual on neurology] Mnogotomnoe rukovodstvo po nevrologii. Moskva, Medgiz. Vol.5. [Tumors of the nervous system] Opukholi nervnoi sistemy. . 1961. 570 p.
(MIRA 16:9)

1. Deystvitel'nyy chlen AMN SSSR (for Davidenkov). 2. Chlen-korrespondent AMN SSSR (for Razdol'skiy).
(NERVOUS SYSTEM--TUMORS)

"APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R000825010006-9

KORST, L.O.

Review of Benjamin L. Cruse's book "Medulloblastoma." Vop. neirokhir.
27 no.3:61-63 My-Je '63. (MIRA 17:9)

APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R000825010006-9"

KORST, Lidiya Osipovna; VASIN, N.Ya., rec.

[Tumors of the parietal lobes of the brain; clinical aspects and diagnosis] Cpukholi temenrykh dalei mozga; klinika i diagnostika. Moskva, Meditsina, 1964. 235 p.
(MIRA 17:?)

KORST, Lidiya Oskarovna; VASIN, N.Ya., red.

[Tumors of the parietal lobes; clinical aspects and diagnosis] Cpunkholi temennykh dolei mozga; klinika i diagnostika. Moskva, Meditsina, 1964. 235 p.
(MIRA 18:2)

"APPROVED FOR RELEASE: 06/14/2000

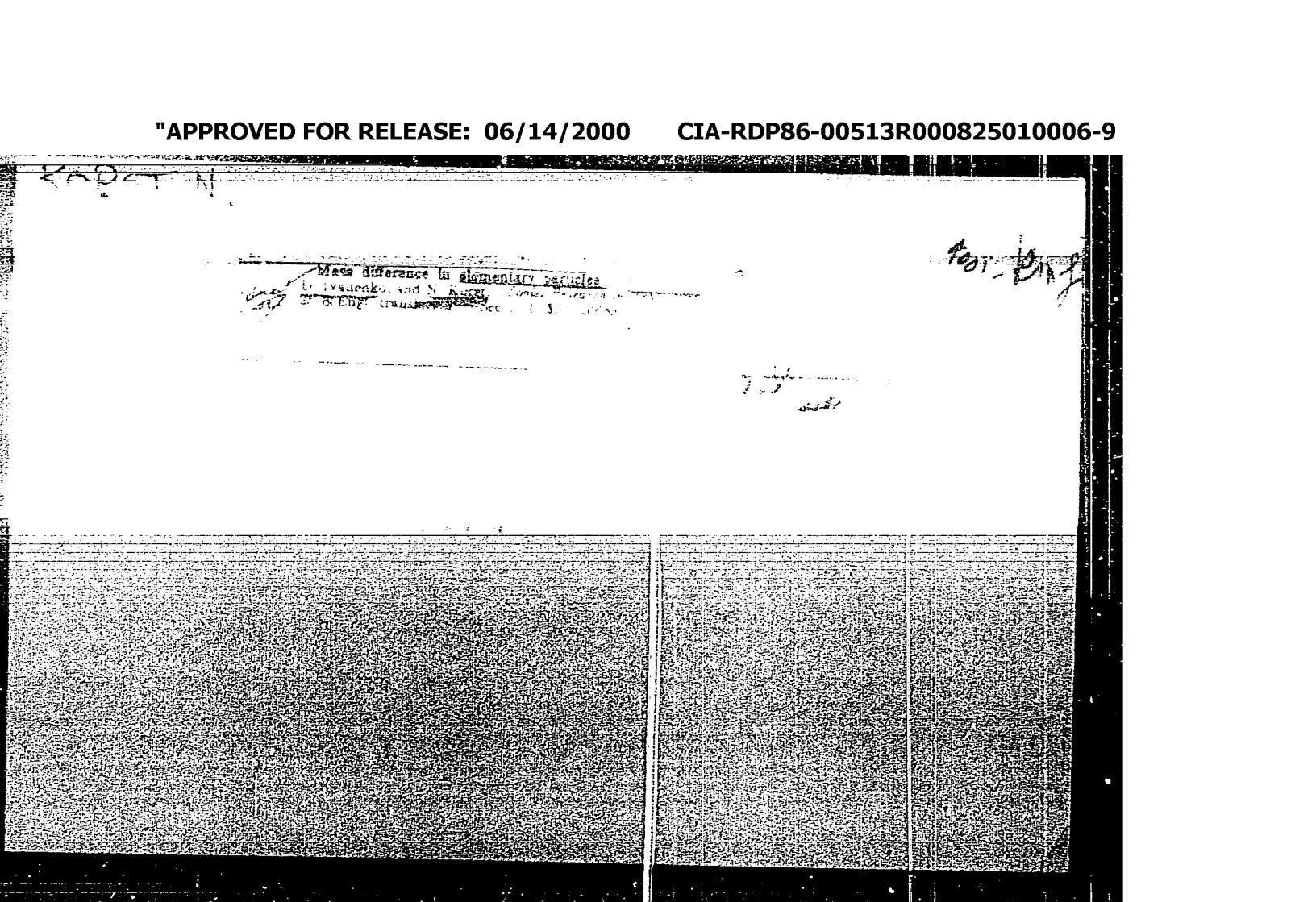
CIA-RDP86-00513R000825010006-9

SECRET

Mass difference in elementary particles

for

and



This image shows a document page that has been heavily redacted. The top portion contains handwritten markings, including the word "SECRET" and the title "Mass difference in elementary particles". Below these markings, there is a large area of heavy noise and redaction. To the right of the redacted area, there are two small, vertical rectangular boxes.

APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R000825010006-9"

BRODSKIY, A.; IVANENKO, D.; HORST, N.

Differences in the mass of elementary particles. Dokl.AN SSSR 105
no.6:1192-1195 D '55. (MLRA 9:4)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.
Predstavlene akademikom N.N.Bogolyubovym.
(Particles, Elementary) (Atomic mass)

9 (0), 21(0)

AUTHORS:

Aleksandrov, I. V., Korst, N. N.

SOV/30-59-10-42/51

TITLE:

Research in the Field of Paramagnetic Resonance

PERIODICAL:

Vestnik Akademii nauk SSSR, 1959, Nr 10, pp 106-107 (USSR)

ABSTRACT:

The Kazan' Branch of the Akademiya nauk SSSR (Academy of Sciences, USSR) and the Kazan' University held a regular All-Union Conference on paramagnetic resonance from June 1 to 5, 1959. Paramagnetic electron resonance and paramagnetic nuclear resonance are applied to many fields of science and engineering besides physics. Ye. K. Zavoyskiy opened the Conference. The following reports were delivered: On the structural investigation of organic and inorganic substances by the former method, reports were delivered by groups of physicists from Moscow, Kazan' and Tbilisi (A. M. Prokhorov, S. A. Al'tshuler, T. I. Sanadze and B. G. Berlava). Reports on theoretical work done in this field were given by N. N. Tikhomirova and V. V. Voyevodskiy. V. M. Chibrikov, S. P. Solodownikov and S. I. Vetchinkin dealt with the application of this method to chemistry. Papers by L. A. Blyumenfel'd and A. E. Komanson showed that this method may also be applied to biology. Several reports were delivered

Card 1/2

8/058/61/000/011/005/025
A058/A101

AUTHORS: Aleksandrov, I.V., Korst, N.N., Sokolov, N.D.

TITLE: Proton exchange effect on nuclear magnetic resonance line width in crystals

PERIODICAL: Referativnyy zhurnal. Fizika, no. 11, 1961, 126, abstract 11V221 (v sb. "Paramagnitn. rezonans", Kazan', Kazansk. un-t, 1960, 186 - 188)

TEXT: The authors calculate the second moment of the nuclear magnetic resonance line in ice crystals. They show that incident to proton tunneling along the hydrogen bonds the second moment decreases by $\sim 20\%$ (on condition that the tunneling frequency is appreciably greater than the nuclear magnetic resonance line width). ✓

I. Aleksandrov

[Abstracter's note: Complete translation]

Card 1/1

S/051/60/008/04/028/032
E201/E691

AUTHORS: Aleksandrov, I.V., Korst, N.N. and Sokolov, N.D.

TITLE: The Effect of the Mobility of Protons on the Width of Nuclear Magnetic Resonance Lines in Crystals

PERIODICAL: Optika i spektroskopiya, 1960, Vol 8, Nr 4, pp 575-577 (USSR)

ABSTRACT: The mobility of hydrogen atoms (protons) in condensed phases may be due to internal rotation or translational transitions from one equilibrium position to another. Nuclear magnetic resonance of protons is one of the most effective methods of investigation of their mobility. The present note describes how the second moment of the nuclear magnetic resonance signal of protons in ice can be used to find the mechanism of proton transitions. The paper is entirely theoretical. There are 6 references, 5 of which are English and 1 from Acta Crystallographica. ✓

SUBMITTED: October 10, 1959

Card 1/1

KORST, N.N.

Bloch's equation for a bound system of two particles with spin 1/2.
Vest. Mosk. un. Ser. 3: Fiz., astron. 16 no.1:76-78 Ja-F '61.
(MIRA 14:4)

1. Kafedra fiziki dlya khimicheskogo fakul'teta Moskovskogo
universiteta.
(Nuclear spin)

KORST, N.N.

Problems in quantum chemistry. Vest.AN SSSR 31 no.9:129-131
S '61. (MIRA 14:10)
(Quantum theory)

89219

S/056/61/040/001/025/037
B102/B212**24.7900 (1147,1158,1160)**AUTHOR: Korst, N. N.

TITLE: Microscopic equations for the magnetic moment in some magnetic resonance problems

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 40,
no. 1, 1961, 249-255

TEXT: The general case of nuclear magnetic resonance is described by the Boltzmann equation for the density matrix of the spin system; for some cases of systems with noninteracting spins, the phenomenological equation of Bloch can also be used. In the present paper a method is suggested for a transition from kinetic Bloch's equations of the density matrix to a system of equations for the mean values of spin functions in general, i.e., for the macroscopic magnetic moment of a nuclear system which consists of interacting spins. All other spin functions (except the macroscopic magnetic moment) are excluded from this system; the equation obtained is analogous to the phenomenological equation of Bloch, and has higher derivatives with

Card 1/5

89219

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B102/B212

Microscopic equations for the...

respect to time. The author examines a spin system which consists of equivalent particles with a spin I and connected by dipole-dipole interactions. Starting from a general equation for the density matrix of the spin system and using Bloch's nomenclature, the following system of macroscopic equations is obtained after extensive calculations:

$$\frac{d\vec{x}_i}{dt} = \gamma \left[\vec{x}_i \vec{H} \right] - \sum_{j=1}^N (\vec{x}_j - \vec{x}_j^0) / T_{ij}, \quad i = 1, 2, \dots, N; \quad (15).$$

$\vec{x}_1 = \vec{M}$; \vec{x}_j , for $j \neq 1$ are values of the vectorial spin function (x_j^0 is the value of the state of equilibrium of x_j), which may be a linear combination of quantities of the type $(\vec{I}_{s_1} \vec{I}_{t_1}) ((\vec{I}_{s_2} \vec{I}_{t_2}) \dots (\vec{I}_{s_n} \vec{I}_{t_n})) \vec{I}_s$. N is the

number of linearly independent equations in the system (15), which is determined not only by the number of particles but also by their distribution. $1/T_{ij}$ is a linear combination of the relaxation coefficient $\Phi_{st,s't'}$. If

Card 2/5

89219

S/056/61/040/001/025/037

B102/B212

Microscopic equations for the...

(15) involves only one equation for \vec{M} , then the ordinary Bloch equation with $T_1 = T_2$ is obtained. Eq. (15) is solved by applying matrix notations.

Using matrices

$$X = \begin{pmatrix} x_1 \\ \vdots \\ x_N \end{pmatrix}, \quad B = \begin{pmatrix} \beta & 0 & \dots & 0 \\ 0 & \beta & \dots & 0 \\ \vdots & \vdots & \ddots & \vdots \\ 0 & 0 & \dots & \beta \end{pmatrix}, \quad \frac{1}{T} = \begin{pmatrix} \frac{1}{T_{11}} & \dots & \frac{1}{T_{1N}} \\ \vdots & \ddots & \vdots \\ \frac{1}{T_{N1}} & \dots & \frac{1}{T_{NN}} \end{pmatrix}. \quad (16)$$

$$x_j = \begin{pmatrix} x_j^+ \\ x_j^- \\ x_{jz} \end{pmatrix}, \quad B = i\gamma \begin{pmatrix} H_z & 0 & -H^+ \\ 0 & -H_z & H^- \\ -1/\epsilon H^+ & 1/\epsilon H^- & 0 \end{pmatrix}, \quad \frac{1}{T_{jj}} = \frac{1}{T_{jj}} \begin{pmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix}.$$

for $x_j^\pm = x_j x_{jz}^\pm + ix_{jy}$, $H^\pm = H_x^\pm + iH_y$ the system (15) can be written as follows:

$(d/dt + 1/T + B)X = \frac{1}{T} X^0$; the matrices $1/T$ and B are commutative, which fact

Card 3/5

89219

S/056/61/040/001/025/037
B102/B212

Microscopic equations for the...

simplifies the solution considerably. A general solution is obtained:

$$x(t) = u(t,0)x(0) + \int_0^t u(t,t')dt' \frac{1}{T} x^0; \text{ with } u(t,t') = R(t,t') \exp\left\{-\frac{t-t'}{T}\right\},$$

$$R(t,t') = \exp\left\{-\int_{t'}^t B(t'')dt''\right\}. \text{ The problem of three equivalent spin-1/2}$$

particles coupled by dipole-dipole interaction is used to demonstrate this method. A molecule having three protons with equal gyromagnetic ratios and being equidistant is dealt with (e.g., CH₃-group); the correlation time is taken to be small ($\tau_0 \omega \ll 1$). With $\Phi = 3\hbar^2 \gamma^4 r_0^4 / 10r^6$, $1/T_{11} = 10\Phi$, $1/T_{12} = \Phi$, $1/T_{21} = (5/16)\Phi$ and $1/T_{22} = (17/4)\Phi$ for the magnetic moment of this system one obtains:

$$\vec{M} = \frac{\vec{T}'\vec{T}''}{(\vec{T}'-\vec{T}'')\vec{T}_{11}} \left[\frac{\vec{T}_{11}-\vec{T}''}{\vec{T}''} \vec{M}_{\vec{T}''} - \frac{\vec{T}_{11}-\vec{T}'}{\vec{T}'} \vec{M}_{\vec{T}'} \right];$$

Card 4/5

89219

S/056/61/040/001/025/037
B102/B212

Microscopic equations for the...

$1/T'$ and $1/T''$ are the eigenvalues of the matrix $\begin{pmatrix} 1/T_{11} & -1/T_{12} \\ -1/T_{21} & 1/T_{22} \end{pmatrix}$

and M_T is the solution of the phenomenological Bloch equation for the corresponding problem. Concluding the author thanks Professor N. D. Sokolov and I. V. Aleksandrov for discussions. There are 10 references: 2 Soviet-bloc and 8 non-Soviet-bloc.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics, Academy of Sciences USSR)

SUBMITTED: July 22, 1960

Card 5/5

39492
3/056/62/043/002/035/053
B125/B102

24,7900

AUTHORS: Karyagin, S. V., and Korst, N. N.

TITLE: Calculation of the paramagnetic relaxation time in viscous media

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43,
no. 2(8), 1962, 613 - 615

TEXT: A general method is given for calculating the relaxation time of dissolved paramagnetic ions whose spin $I \geq 1$ interacts with the ambient medium according to the law $G(t) = \sum_{l,m} I_l^m F_l^m(t)$ (1). Here I_l^m are the components of the irreducible spin tensor, $F_l^m(t)$ are the components of the irreducible tensor as referred to the coordinates of the medium. For the sake of simplicity, summation in (1) is confined to quadrupole interaction:
 $G(t) = \sum_{m=-2}^2 I_2^m F_2^m(t)$. The symbols are the same as in U. Fano's and

Card 1/3

s/056/62/043/002/035/053
B125/B102

Calculation of the paramagnetic ...

G. Racach's work Irreducible Tensorial Sets, Academic Press, N. Y., 1960.
The spin relaxation times can be found from the kinetic equation

$$\frac{d\langle Q \rangle}{dt} = i \langle [Q, \omega_0 I_z] \rangle - \sum_{m=-2}^1 J_2^m \{ \langle [I_2^m, [I_2^{-m}, Q]] \rangle - \langle [I_2^m [I_2^{-m}, Q]] \rangle_0 \}. \quad (5)$$

The time dependence of the spin operator $\langle I \rangle$ of the ion in question follows from a system of I linear equations for integral spins and $(I + 1/2)$ linear equations for half-integral spins. The relation

$$\langle I_{\pm 1} \rangle = \frac{1}{6} B_{\pm} [3e^{-(\Phi_0 + \Phi_1)t} + 2e^{-(\Phi_0 + \Phi_1)t} e^{\mp i\omega_0 t}]. \quad (11)$$

holds for a $3/2$ spin (V^{++} or Cr^{3+} ions). Relaxation in this case has two characteristic times for both the longitudinal and transverse components. When $\omega_0 \tau_c \ll 1$, on account of the very short relaxation time τ_c , then relaxation will be determined by only one constant $1/T = 12\bar{\Phi}$ which is equal for all spin components.

X

Card 2/3

S/020/62/147/003/018/027
B104/B186

AUTHORS: Korst, N. N., Savel'yev, V. A., Sokolov, N. D.

TITLE: Consideration of the averaging over the natural vibrational state when calculating the second moment of the nuclear magnetic resonance signal

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 147, no. 3, 1962, 594 - 596

TEXT: Neglecting the uncertainty of the position of the protons in their natural vibrational state leads to the difference between the second moments of the n.m.r. proton line of ice as calculated with the van Vleck formula, which was $\langle \Delta\omega^2 \rangle = 25$ gauss² for stationary protons (this value is lower by 20% when the protons perform a motion along the H-bonds) and those measured in experiments ($T = 90^\circ K$; $\langle \Delta\omega^2 \rangle = 36.7 \pm 1.7$ gauss²; K. Kume, J. Phys. Soc. Japan, 15, 1493 (1960)). The uncertainty is associated with the zero energy of the atoms. With consideration of neighboring proton pairs, the second moment of an ice single crystal is

$$\langle \Delta\omega^2 \rangle = \frac{3}{4} g^4 \beta^4 h^{-2} I (I + 1) \left[\frac{3 \cos^2 \theta - 1}{R^2} \right]^2. \quad (2).$$

Card 1/3

S/020/62/147/003/018/027
B104/B186

Consideration of the...

Expanding into powers of the deviations of the coordinates from their equilibrium values (after averaging over all possible mutual positions of the vectors \vec{R} and \vec{H}) leads to

$$\langle \Delta\omega^2 \rangle = \frac{3}{5} g^4 \beta^4 \hbar^{-2} R^{-6} I (I+1) \left\{ 1 + \frac{6 \overline{(\Delta r_1)^2}}{\left[2r_0 \sin \frac{\Phi_0}{2} \right]^2} + \frac{6 \overline{(\Delta r_2)^2}}{\left[2r_0 \sin \frac{\Phi_0}{2} \right]^2} + \frac{10 \overline{\Delta r_1 \Delta r_2}}{\left[2r_0 \sin \frac{\Phi_0}{2} \right]^2} + \frac{9}{4} \overline{(\Delta\Phi)^2} + \frac{87}{32} \overline{[(\Delta\Phi)^2]^2} \right\}, \quad (3)$$

for a polycrystal. \vec{R}_{ij} is the radius vector linking the i-th proton to the j-th. Computation with formula (3) showed that the term $\overline{(\Delta\Phi)^2}$ makes up 70% of the correction to the second moment. Considering more distant protons one obtains

$$\langle \Delta\omega^2 \rangle = 0.80 \gamma^4 \hbar^2 R^{-6} (I + 0.21) = 31.1 \text{ gauss}^2.$$

Further improvement can be achieved by taking the hydrogen bond into
Card 2/3

S/020/62/147/003/018/027
B104/B186

Consideration of the...

account. The results show that proton transitions along the hydrogen bonds at $T = 90^{\circ}\text{K}$ have little probability. Similar calculations of the second moments of polyethylene and of 1,2-dichloro ethane with formula (3) yielded good agreement with experimental data as published in J. Polym. Sci., 26, 171 (1957); J. Chem. Soc., 17, 972 (1949). There is 1 table.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR
(Physics Institute imeni P. N. Lebedev of the Academy of Sciences USSR)

PRESENTED: May 14, 1962, by V. N. Kondrat'yev, Academician

SUBMITTED: April 30, 1962

Card 3/3

S/020 '62/147/003/018/027
B104/186

AUTHORS: Korst, N. N., Savel'yev, V. A., Sokolov, N. D.

TITLE: Consideration of the averaging over the natural vibrational state when calculating the second moment of the nuclear magnetic resonance signal

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 147, no. 3, 1962, 594 - 596

TEXT: Neglecting the uncertainty of the position of the protons in their natural vibrational state leads to the difference between the second moments of the n.m.r. proton line of ice as calculated with the van Vleck formula, which was $\langle \Delta\omega^2 \rangle = 25 \text{ gauss}^2$ for stationary protons (this value is lower by 20% when the protons perform a motion along the H-bonds) and those measured in experiments ($T = 900\text{K}$; $\langle \Delta\omega^2 \rangle = 36.7 \pm 1.7 \text{ gauss}^2$; K. Kume, J. Phys. Soc. Japan, 15, 1493 (1960)). The uncertainty is associated with the zero energy of the atoms. With consideration of neighboring proton pairs, the second moment of an ice single crystal is

$$\langle \Delta\omega^2 \rangle = \frac{3}{4} g^4 \beta^4 h^{-2} / (I + 1) \left[\frac{3 \cos^2 \theta - 1}{R^2} \right]^2. \quad (2).$$

Card 1/3

Consideration of the...

S/020/62/147/003/018/027
B104/B186

Expanding into powers of the deviations of the coordinates from their equilibrium values (after averaging over all possible mutual positions of the vectors \vec{R} and \vec{H}) leads to

$$\langle \Delta\omega^2 \rangle = \frac{3}{5} g^4 \beta^4 \hbar^{-6} / (l + l) \left\{ 1 + \frac{6 \overline{(\Delta r_1)^2}}{\left[2r_0 \sin \frac{\Phi_0}{2} \right]^2} + \frac{6 \overline{(\Delta r_3)^2}}{\left[2r_0 \sin \frac{\Phi_0}{2} \right]^2} + \frac{10 \overline{\Delta r_1 \Delta r_3}}{\left[2r_0 \sin \frac{\Phi_0}{2} \right]^2} + \frac{9}{4} \overline{(\Delta\Phi)^2} + \frac{87}{32} l \overline{[(\Delta\Phi)^2]} \right\}, \quad (3)$$

for a polycrystal. \vec{R}_{ij} is the radius vector linking the i-th proton to the j-th. Computation with formula (3) showed that the term $\overline{(\Delta\Phi)^2}$ makes up 70% of the correction to the second moment. Considering more distant protons one obtains

$$\langle \Delta\omega^2 \rangle = 0,80 \gamma^4 \hbar^2 R^{-6} \{ 1 + 0,2l \} = 3l,1 \text{ gauss}^2.$$

Further improvement can be achieved by taking the hydrogen bond into
Card 2/3

Consideration of the...

S/020/62/147/003/018/027
5104/B186

account. The results show that proton transitions along the hydrogen bonds at T = 90°K have little probability. Similar calculations of the second moments of polyethylene and of 1,2-dichloro ethane with formula (3) yielded good agreement with experimental data as published in J. Polym. Sci., 26, 171 (1957); J. Chem. Soc., 17, 972 (1949). There is 1 table.

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Card 3/3

KORST, N.N.; KHMZANOVICH, T.N.

Relaxation and shape of the paramagnetic resonance line in
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AUTHORS: Korst, N. N.; Savel'yev, V. A.; Sokolov, N. D.

TITLE: The second moment of the NMR signal and the structure of ice

SOURCE: Fizika tverdogo tela, v. 6, no. 4, 1964, 1242-1243

TOPIC TAGS: nuclear magnetic resonance, second-moment, ice structure

ABSTRACT: Magnitudes of the second moment $\langle \Delta\omega^2 \rangle$ of the NMR signal from the protons of ice are computed by the modified Van Vleck formula in which the uncertainty in proton position due to the zero vibrational energy is considered. The extreme values of the geometrical parameters are used: the length of the O-H bond in ice, r_0 (0.98\AA and 1.01\AA) and the H-O-H valence angle, Φ_0 (104° and $109^\circ 28'$). Values for the second moment are obtained between 33 and 40 (gauss) 2 , taking into account the frequency-temperature dependence and the exchange of protons by the tunnel effect. These values are not significantly different from the experimental value

$$\langle \Delta\omega^2 \rangle = 36.7 \pm 1.7 \text{ (gauss)}^2.$$

Card 1/2